SCIENCE
Fifth Grade

LIFE SCIENCE STANDARDS

Cell Structure and Function

The student will investigate the structure and function of plant and animal cells.

Key	Reporting Category		Project WET Activity
D		Draw and label the basic structures of plant and animal cells (i.e., cell wall, cell membrane, cytoplasm, nucleus, and chloroplasts).	
D		Compare and contrast the basic structures of plant and animal cells (i.e., cell membrane, cytoplasm, and nucleus)	
A	**SF**	Identify basic structures of plant and animal cells.	
A	**SF**	Compare and contrast basic structures and functions of plant and animal cells.	
A	**SF**	Distinguish between single cell and multicellular organisms.	
I		Differentiate among cells, tissues, organs, and systems.	

Interactions Between Living Things and Their Environment

The student will investigate how living things interact with one another and with nonliving elements of their environment.

D		Classify specific kinds of relationships among plants and animals within an ecosystem.	Life in the Fast Lane, 79
A	**E**	Determine various types of plant and animal relationships within an ecosystem.	
D		Predict the consequences of a human action on the environment.	
A	**E**	Identify environmental changes caused by living things.	
A	**E**	Predict the effects of human actions and/or natural disasters on the environment.	Sum of the Parts, 267 Nature Rules, 262

Food Production and Energy for Life

The student will study the basic parts of plants, investigate how plants produce food, and discover that plants and animals use food to sustain life.

I		Describe how various plant structures are associated with food production (i.e., stems, leaves, and stomata).	Thirsty Plants, 116
A	**SF**	Match plant structures with their functions.	Thirsty Plants, 116
A	**SF**	Identify photosynthesis as the food manufacturing process in plants.	
A	**SF**	Identify what plants need (i.e., water, sunlight, and carbon dioxide) to manufacture food.	Thirsty Plants, 116

Heredity and Reproduction

The student will understand the basic principles of inheritance.

I		Explain the function of the flower in plant reproduction.	
I		Observe specific plants and explain how they grow from and produce seeds (i.e., sunflowers, and beans).	
I		Compare and contrast how different plants reproduce (i.e., flowers and spores).	

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D		Recognize that new generations of living things arise through reproduction.	
A	**LC**	Compare the traits of parents and their offspring.	
A	**LC**	Infer the importance of reproduction to the survival of a species.	
D		Describe the life cycle of a fast growing plant.	
A	**LC**	Recognize the difference between complete and incomplete metamorphosis.	

Diversity and Adaptation Among Living Things

The student will understand that living things have characteristics that enable them to survive in their environment.

D		Classify plants according to their characteristics.	
A	**E**	Match the form with the function of structures in living things.	Salt Marsh Players, 99
D		Compare how plants are adapted to different environments (e.g., palm tree, fir tree, and cactus).	Water Address, 122
A	**E**	Compare how organisms adapt to different environments.	Water Address, 122
A	**E**	Identify adaptations that enhance the survival of organisms in an environment.	
A	**E**	Determine which organisms are likely to survive in a particular environment.	

Biological Change

The student will understand that living things have characteristics that enable them to survive in their environment.

D		Explain how fossils provide information about the past.	
A	**LC**	Compare the causes that led to the extinction of various organisms.	
A	**LC**	Analyze how fossils provide information about the past.	
A	**LC**	Compare the relative age of fossils in rock layers.	

EARTH SCIENCE STANDARDS

Earth and Its Place in the Universe

The student will investigate the structure of the universe.

A	**SC**	Distinguish among the planets according to specific characteristics.	
M		Demonstrate how moon phases occur.	
D		Explain why the moon appears to change shape.	
A	**SC**	Identify and arrange the phases of the moon in the correct sequence.	
D		Explain the difference between rotation and revolution in the solar system.	
A	**SC**	Identify the force that pulls objects toward the Earth.	
A	**SC**	Differentiate between the Earth's rotation and its revolution.	
A	**SC**	Recognize that the appearance of an object in the sky is affected by its size, motion, and distance from the Earth.	

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Atmospheric Cycles

The student will investigate the relationships among atmospheric conditions, weather, and climate.

I		Analyze data obtained from studies of atmospheric conditions (i.e., air pressure, wind speed, and precipitation).	
A	**SC**	Distinguish between weather and climate.	
A	**SC**	Predict weather conditions based on an analysis of atmospheric data.	
I		Explain the effects of landforms on weather and climate.	
A	**SC**	Identify how various geographic features affect weather and climate.	Branching Out, 129
D		Demonstrate the components and processes of the water cycle.	Incredible Journey, 161
A	**SC**	Identify the basic features of the water cycle.	Thirsty Plants, 116
I		Analyze how temperature affects evaporation, condensation and precipitation.	Water Models, 201

Earth Features

The student will understand that the earth has many geological features that are constantly changing.

D		Explain how certain forces cause changes in the earth's geological features (i.e., wind, water, and plate tectonics).	
A	**ER**	Identify forces that cause geological change.	Energetic Water, 242
D		Construct a model that depicts the layers of the earth.	
A	**ER**	Recognize that the age of Earth materials can be determined by their position in rock layers.	The Great Stony Book, 150
A	**ER**	Identify characteristics of the earth's layers.	

Earth Resources

The student will investigate the properties, uses, and conservation of earth's resources.

D		Choose the appropriate use for an earth material (e.g., fuel, monument, and house foundation).	
A	**ER**	Select a diagram that illustrates the most appropriate use of an earth material.	
D		Describe the process of soil formation.	
A	**ER**	Select the soil characteristics that best support plant growth.	
A	**ER**	Recognize the impact of society's use of nonrenewable resources over time.	Sum of the Parts, 267

PHYSICAL SCIENCE STANDARDS

Forces and Motion

The student will investigate the effects of force on the movement of objects.

D		Explain the effect that gravity has on objects found on earth.	
A	**ME**	Identify the effect that gravity has on objects found on or near the earth's surface.	
D		Explain the relationships among mass, force, and distance traveled.	
I		Explain the relationship between slope and the amount of force.	
A	**ME**	Determine the effect of slope and friction on the speed of an object.	

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D		Explore and explain the use of simple machines.	
A	**ME**	Match simple machines with their uses.	
D		Explore and explain how friction affects motion.	Just Passing Through, 166

Structure and Properties of Matter

The student will investigate the characteristic properties of matter.

A	**M**	Select a material according to a description of its physical properties.	
A	**M**	Determine the appropriate metric unit of measurement for specific properties of matter.	
A	**M**	Recognize the law of conservation of matter.	
D		Describe how evaporation and condensation occur as a result of temperature change.	Water models, 201
D		Explain why different types of matter freeze, melt, and/or evaporate at different rates.	Hangin' Together, 35
A	**M**	Recognize how heat loss or gain is associated with a change in the state of matter.	Molecules in Motion, 47

Interactions of Matter

The student will investigate the interactions of matter.

I		Identify conditions associated with a chemical change.	
A	**M**	Distinguish between physical and chemical changes.	
A	**M**	Compare the effect of physical and chemical changes on matter.	
A	**M**	Identify a substance as an acid (i.e., vinegar or lemon juice) or a base (i.e., soap or baking soda).	

Energy

The student will investigate energy and its uses.

A	**ME**	Recognize how various materials conduct heat.	
D		Demonstrate and explain how energy can change form.	
A	**ME**	Differentiate between potential and kinetic energy.	
A	**ME**	Identify ways that energy is transferred.	
D		Observe and describe how lenses affect a beam of light.	
A	**ME**	Select the illustration that depicts how lenses refract light.	
D		Explore and describe the uses of magnets.	
A	**ME**	Identify the poles of a magnet.	
A	**ME**	Identify the description of a magnetic field.	
I		Construct and explain a parallel circuit.	
A	**ME**	Distinguish between series and parallel circuits.	
D		Explain the use of a specific type of electrical circuit.	

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